SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

CASE NO. EL05-022

IN THE MATTER OF THE APPLICATION BY OTTER TAIL POWER COMPANY

ON BEHALF OF THE BIG STONE II CO-OWNERS

FOR AN ENERGY CONVERSION FACILITY SITING PERMIT FOR THE

CONSTRUCTION OF THE BIG STONE II PROJECT

PREFILED REBUTTAL TESTIMONY

OF

JOHN KNOFCZYNSKI

MANAGER OF ENGINEERING

HEARTLAND CONSUMERS POWER COMPANY

JUNE 16, 2006

TESTIMONY OF JOHN KNOFCYNSKI

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BEFORE THE SOUTH DAKOTAPUBLIC UTILITIES COMMISSION

DIRECT REBUTTALTESTIMONY OF

JOHN KNOFCZYNSKI

I. INTRODUCTION

Q: Please state you name and business address.

A: John Knofczynski, 203 West Center Street, Madison, SD 57042.

Q: Did you previously submit testimony in this proceeding?

A: Yes. I submitted direct testimony, Applicants' Exhibit 15.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q: What is the purpose of your testimony?

A: I will respond to the May 26, 2006 testimony of Minnesota Center for Environmental Advocacy (MCEA) witnesses Schlissel and Sommers with regard to resource planning issues specifically affecting Heartland.

Q: Please summarize your testimony.

A: Heartland has a need for the additional baseload capacity and energy that Big Stone Unit II is designed to provide. Heartland has performed detailed resource planning studies that show this. More recently, we have experienced significant customer growth that has, in turn, accelerated our needs compared to those originally submitted in the Application. As a result, we have adjusted our forecast and accelerated our resource plan. Finally, Heartland plans for and includes demand-side management (DSM) and renewables in its resource planning efforts.

III. DEMAND-SIDE MANAGEMENT (DSM)

Q: Schlissel and Sommer state that the Applicants should do more DSM instead of Big Stone Unit II. Do you agree?

A: No. Like the other Applicants, we propose to do DSM *and* Big Stone Unit II.

Q: What has Heartland accomplished in DSM to-date?

A: Heartland has worked with its wholesale customers to evaluate and implement DSM programs for those customers that want to implement those programs. In 2005, Heartland estimates that its peak demand was reduced by 7 MW, and its energy consumption was reduced by 90 MWh.

Q: What are Heartland's plans to do more DSM, in addition to Big Stone Unit II?

A: Heartland will continue to work with its customers to encourage more efficient use of their electric supply through load management efforts. As Heartland adds new customers, we are supporting DSM efforts for these new customers through low-interest loans for the purchase and installation of new load management systems.

Q: Is Heartland subject to the Minnesota Conservation Improvement Program (CIP) legislation?

A: Although Heartland itself and our South Dakota customers are not, Heartland's customers in Minnesota are subject to the CIP.

Q: What does CIP require of those subject to the legislation?

A: They must invest at least 1.5% of their annual gross revenues in customer energy conservation programs.

Q: Are these programs and their progress reviewed by the state of Minnesota?

A: Yes, they are reviewed in detail by the Minnesota Department of Commerce.

Q: How does Heartland consider the effects of DSM as part of its resource planning?

A: Heartland's load forecast is used to predict the effects of DSM that our customers incorporate in their systems. The corresponding increases in efficiency that the customers see

through the use of their load management systems are represented in lower demand levels and increasing load factors. The long-term load forecasts capture these effects which are then reflected in Heartland's resource planning efforts.

Q: Please explain Heartland's ongoing DSM efforts.

A: I detailed those efforts on page 6 of my direct testimony.

IV. RENEWABLES

Q: Schlissel and Sommer state that the Applicants should do renewables instead of Big Stone Unit II. Do you agree?

A: No. Like the other Applicants, we have renewables and plan to do more. We propose to do renewables *and* Big Stone Unit II.

Q: What has Heartland done so far in renewables?

A: In 2005, the wind turbines at our customers' sites produced 1,616 MWhs.

Q: What is Heartland's plan for more renewables for the future?

A: Primarily, Heartland is investigating potential wind energy developments. Heartland is negotiating for the output of a proposed wind development in central South Dakota in the minimal amount of 5MW. Heartland is also evaluating, in conjunction with several of our customers, the addition of wind turbines adjacent to the customers' communities. Heartland is also evaluating a landfill gas generator with one of our customers.

Q: Does Heartland assume that wind has capacity value in their system-level studies?

A: Yes, we do. Heartland has stated (in Mike McDowell's direct testimony, Applicants' Exhibit 4) that wind can be accredited for up to 20 percent of nameplate rating. From our experience with our existing wind generators, during the summer peak the highest capacity we have seen from the wind generators is approximately 10 percent of nameplate.

V. LOAD FORECAST

Q: Has Heartland's load forecast changed since the original Application?

A: Yes, we have been able to add several new customers and anticipated additional customer load growth since the Application was submitted.

Q: Can you briefly describe the sources of information for your original forecast?

A: Yes. As described in my direct testimony, our customer forecasts are derived from two sources. The primary source was an econometric load forecast that was performed in 2002 for Heartland by Power Systems Engineers. That forecast included the customers that Heartland had contracts with at that time.

The second source was data received for new customers from third parties; typically consultants retained by the new customers. The forecast from the econometric model and the forecasts from the new customers are then added together, to provide the "base" forecast showing the total customer power and energy requirements. The total forecast of Heartland's power and energy needs shown in the Application includes the base customer forecasts, as well as an additional growth component added to reflect the original goals of Heartland's Board of Directors.

Q: What were the original additional growth goals of Heartland's Board of Directors, and what portion of your Application forecast do these goals represent?

A: The Heartland Board of Directors originally adopted goals to add load to replace the loss of Marshall in 2016. Accordingly, Heartland provided load projections for new undetermined customers in its load forecast provided as part of the Application. Heartland's forecast in the Application included 6 MW of new load in 2006, 4 MW in 2007, and 3 MW for each year from 2008 to the end of the forecast period. These new load additions, in addition to the base

forecasted growth of our other customers, would result in a system load in 2016 that is approximately the same as Heartland's load in 2005, before the load growth goals were established.

Q: Do these goals established by the Heartland Board of Directors and subsequently added to your load forecast for this proceeding completely replace the loss of Marshall?

A: No. Our forecast assumes a loss of 60 MW when Marshall departs our system in 2016. After the growth goals were established in 2005, Heartland signed on 15 MW of new customer load that was then included in the base forecast. The growth goals include an additional 37 MW of new load to be added by 2016, above and beyond the base forecast. In total, the 15 MW of new customer load and the additional 37 MW of growth goals add up to 52 MW of the 60 MW resulting from the loss of Marshall.

Q: Who are the primary target markets for fulfilling your growth goals?

A: We primarily aim to serve small municipals, municipal agencies and other non-profit entities who are increasingly finding themselves too small in scale to meet the increasingly complex challenges of energy supply, prices and operations. To the extent we are successful in identifying and helping these communities, the communities and the region as a whole are better off.

Q: How are you doing so far on these original goals?

A: Very well. Heartland is currently in discussions or negotiations with several municipal utilities and municipal agencies that are interested in supplemental requirements, full-requirements or long-term, fixed block sales. Heartland has exceeded its goal for 2006 by adding a new 10 MW load, or 4 MW more than the forecasted 6 MW goal for 2006. We expect to sign a letter of intent for another 6 MW of load in the near future. We have been notified by

one of our existing customers that they plan to add an industrial load that could add 25 to 30 MW of load to that customer's system as soon as 2008. This latter, potential new load is particularly exciting, because it would be an expansion of an existing bio-fuels production facility in one of our customer's service area.

Taken together, these additions alone amount to a total of approximately 41 to 46 MW of new load in the next few years, which already exceeds the 37 MW of new load Heartland's Board added to the forecast between 2006 and 2016. In other words, Heartland has already met or exceeded the original goals set by our Board of Directors for new load through the year 2016, and included in our forecast shown in the Application.

We are also discussing the sale of fixed blocks of base load resources to a municipal utility and a municipal agency – each of which is interested in 30 to 40 MW. We are currently being considered as the full or supplemental power supplier for at least three other municipal utilities in Minnesota and Iowa.

In summary, subsequent to the Application, Heartland has already secured new loads such that actual loads will meet or exceed the original growth goals set by the Board of Directors for the time period 2006 to 2016. And, we did it ten years early.

Further, we continue in active discussions with additional prospects to further exceed the Board's original growth goals. In fact, as I describe later in my testimony, we have established new growth goals for ourselves as well, and revised our resource plans accordingly.

Q: Before you discuss your revised plans, please provide an illustration of your forecast and resource plan that were effective at the time of the Application.

A: For purposes of illustration, I have prepared Applicants' Exhibit 49-A, which depicts the load and capacity forecast for Heartland for the time period 2006 to 2021 effective at the time of

the Application. Exhibit 49-A shows the forecasted load and losses and associated resource requirements necessary to fulfill the Mid-Continent Area Power Pool (MAPP) Reserve Capacity Obligation that Mr. Koegel of MAPPCOR discusses in his direct and rebuttal testimonies. The exhibit also stacks up existing and planned resources to meet the resource requirement.

Q: How has your peak demand and energy forecast been changed as a result of your early accomplishment of the Heartland Board's original growth goals?

A: We have revised our peak demand and energy forecast in accordance with Applicants' Exhibit 49-B. Overall, we are now projecting peak demand in 2006 of 118 MW, or 10 MW more than the forecast in our Application. This new forecast grows to 157 MW in 2008 (or 39 MW higher than the Application), and 152 MW by 2021 (45 MW higher than the Application). The corresponding energy forecast shows similar increases in corresponding years.

Q: What are the primary changes underlying the new forecast, compared to the Application forecast?

A: Both the Application and the new forecast share the same base customer demand and energy forecast. They only vary from each other because they use different levels of growth goals.

The forecast submitted with the Application assumed that the load associated with the Board's original growth goals would be added in small, gradual increments (3 to 6 MW per year). This produced the growth shown on Applicants' Exhibit 49-A. Now that we have already exceeded those original goals, we expect the next additions will come in significant "chunks" over the next few years.

Q: As an example of these increases, Applicants' Exhibit 49-B shows a significant step-change in the peak demand and energy forecast in 2008. What does this increase represent?

A: This 25 MW increase represents the new industrial load that is expected in one of our existing customer's service territories described above. This new load is an expansion of an existing soybean processing facility to refine the soybean oil. The load is anticipated to have a load factor exceeding 90 percent.

VI. RESOURCE PLANNING

Q: Throughout their testimony, Schlissel and Sommer point to the Applicants' capacity needs as an indicator of the need for additional resources. Are Heartland's capacity needs changing?

A: Yes. Our original planning studies using our original demand and energy forecast clearly showed the need for additional baseload. Now, with our recent experience of significant increases in customer loads and an associated increase in our demand and energy forecast, that baseload need is even larger than before.

Q: How has your new peak demand and energy forecast affected your resource plan?

A: Because we have achieved our original growth goals early, our need for additional resources has been accelerated. For comparison to our previous plan included in the Application and shown on Applicants' Exhibit 49-A, Applicants' Exhibit 49-C shows our new forecast; its associated resource requirements including the MAPP Reserve Capacity Obligation, and our revised resource plan to meet those increased needs. Our new plan shows Heartland will be deficient in owned resources (shown as short-term purchases on Exhibit 49-C) in 2008 through 2010, and from 2014 through 2016.

Q: Exhibit 49-C shows the timing of your 80 MW share of Whelan Energy Center 2 (WEC2) in 2011. Is that a change from your resource plan envisioned at the time of the Application?

A: Yes. Subsequent to the filing of the Application, in January 2006 the participants in the Whelan Energy Center 2 (WEC2) development determined that they needed the baseload capacity and energy from that development in 2011, rather than the originally-scheduled 2012 in-service date shown in Exhibit 49-A. Heartland concurred in this change, because of the recent acceleration in our own growth pattern and resource need I described earlier in my testimony.

Q: Exhibit 49-C shows a capacity sale during 2011 to 2013. What does that represent?

A: To manage our capacity inventory at the time both Big Stone Unit II and WEC2 are installed in 2011, we plan to do a short-term sale of a portion of our capacity from the Laramie River Station. This will help us "smooth out" the large capacity addition that will occur because both Big Stone Unit II and WEC2 are scheduled to go in-service in the same year, and help us better fit our load growth pattern. Then, when the Cooper purchase agreement ends in 2013, we are ready to accommodate that drop in our baseload capacity by ending the short-term sale from Laramie River. This is a normal, capacity balancing approach that utilities routinely do to match their generation capabilities to load.

Q: Exhibit 49-C shows some significant capacity surpluses in 2017 and thereafter, when Marshall departs your system. How do you plan to manage that?

A: Those apparent surpluses represent capacity decisions we will be making over the next few years, as various current uncertainties resolve. If we are successful in our growth efforts in attracting additional new municipal utility customers, then those surpluses may be actually be

small or non-existent by the time 2017 arrives. On the other hand, if growth is slower, we may consider additional short-term or even long-term sales of existing capacity to other utilities.

Q: Schlissel and Sommers state Heartland and other Applicants have no evidence to suggest the need for baseload capacity. Do you agree?

A: No. As I described in my direct testimony and in order to meet the increasing customers' needs described above, Heartland has determined that baseload resources like Big Stone Unit II will be needed by 2011 or before. In addition to baseload, Heartland will need other resources, including DSM and renewables, in order to meet its resource capacity obligation, and its associated energy requirements.

Q: Could Heartland use more baseload capacity than your proposed share of Big Stone Unit II?

A: Yes. Although we find that our proposed 25 MW share in 2011 is generally a good fit for Heartland, having another 5 MW for a total of 30 MW from Big Stone Unit II would be preferable for several reasons.

First, the additional capacity would provide an additional, incremental level of risk management to cover forecast uncertainty, future resource uncertainty, and the potential for extreme weather conditions.

Second, with our new, revised forecast showing total growth at about 4 to 5 MW per year in the 2001-to-2013 time period, a larger share in Big Stone Unit II would satisfy our customers' demand for baseload capacity and energy requirements for an additional one or two years, and would thereby help delay the need for the next resource addition and its associated financial impacts on our customers.

Q: Does this conclude your testimony?

A: Yes.

Heartland Load and Capacity Forecast
Included in South Dakota Permit Application

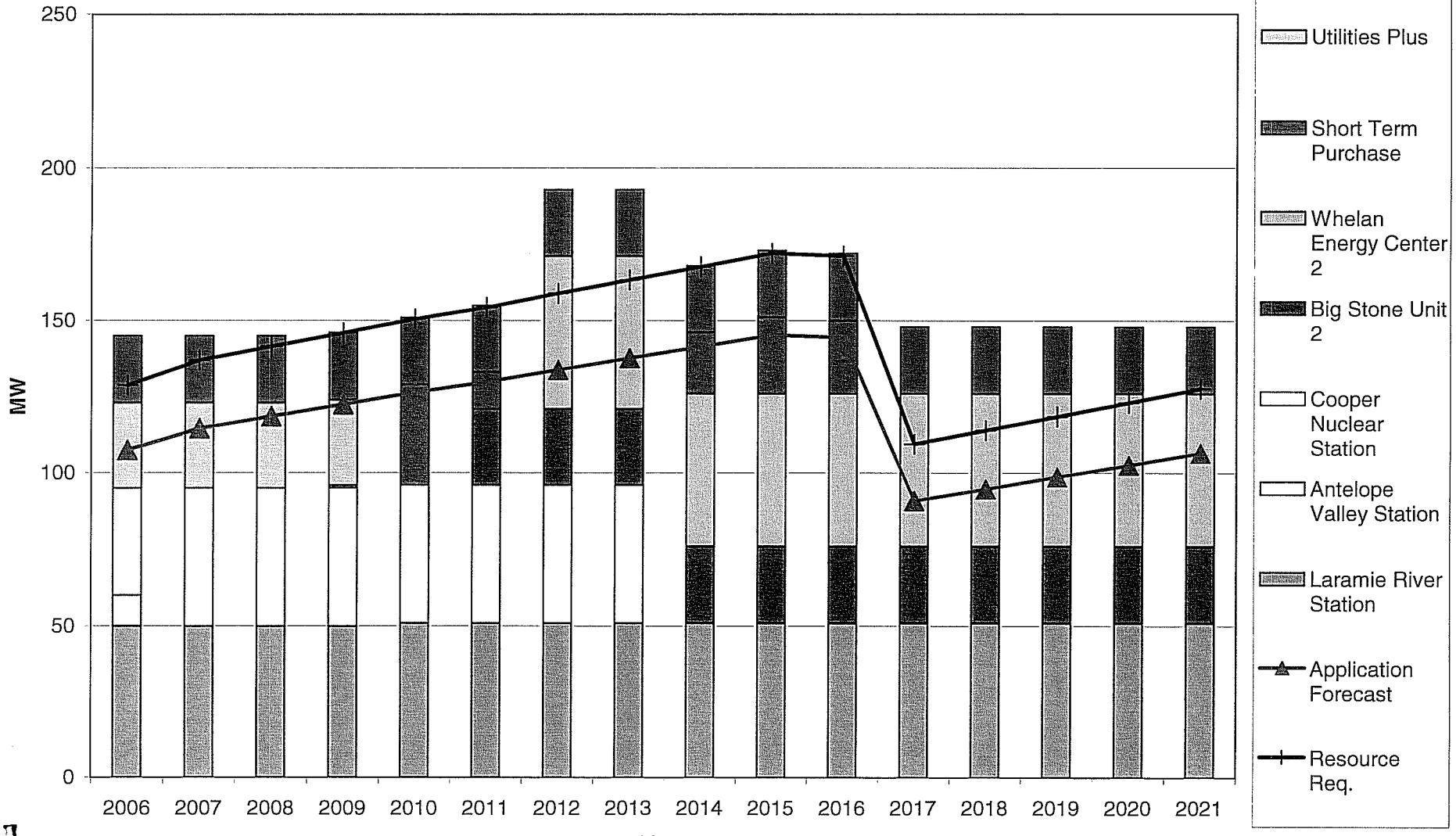

EXHIBIT
Applicants
Exhibit 49

Applicants' Exhibit 49-B

Comparison of Peak Demand and Energy Forecasts

Heartland Siting Permit Application and New Forecast

	Peak Demand[1]			Energy		
Year	Forecast From Application (MW)	New Load Projections (MW)	Change (MW)	Forecast From Application (MWH)	New Load Projections (MWH)	Difference (MWH)
2006	108	118	10	682,849	725,443	42,594
2007	115	126	11	715,243	765,930	50,687
2008	119	157	39	736,583	984,768	248,185
2009	123	162	39	758,859	1,009,055	250,196
2010	127	166	39	781,151	1,033,968	252,817
2011	130	170	40	803,480	1,059,896	256,416
2012	134	174	40	825,957	1,087,475	261,518
2013	138	178	41	849,538	1,114,141	264,603
2014	141	183	41	872,958	1,140,550	267,592
2015	145	187	42	896,928	1,168,729	271,801
2016	145	186	41	687,216	959,960	272,744
2017	91	134	43	486,679	754,288	267,609
2018	95	138	43	511,249	790,541	279,292
2019	99	143	44	535,719	819,244	283,525
2020	103	147	44	560,621	847,059	286,438
2021	107	152	45	586,410	876,257	289,847

Notes:
1. Includes forecasted peak demand plus losses.

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EXHIBIT
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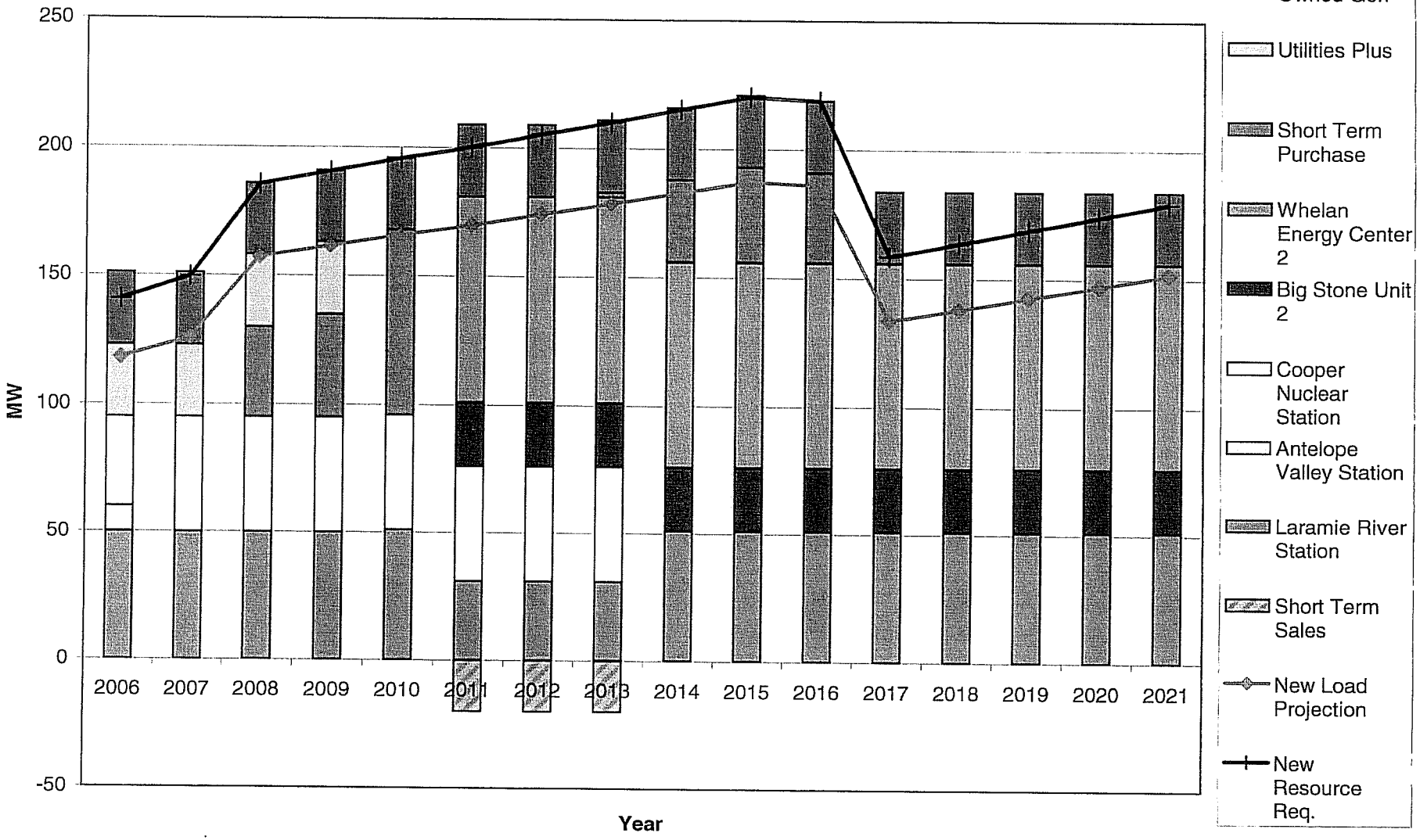
APPLICANTS' EXHIBIT 49-B

Heartland Load and Capacity Forecast
New Forecast and Plan



EXHIBIT
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Applicants' EXHIBIT 49-C